AMENDMENTS TO THE CLAIMS:

The listing of claims will replace all prior versions, and listings of claims in the application:

LISTING OF THE CLAIMS

1-2. (Cancelled)

3. (Currently Amended) Device comprising:

a combustion chamber;

a burner that provides for combustion of a fuel/oxidant mixture, having a combustion temperature above 2500°C, within a said combustion chamber at a temperature below said combustion temperature;

a material which endures a maximum temperature that is less than ~~a~~ the combustion temperature of said fuel and said oxidant, said material being provided in said combustion chamber;

one or several supply lines for the fuel as well as the oxidant, in order to conduct these into the combustion chamber; ~~and~~

at least one additional supply line connected to a low combustion value gas supply in order to conduct a low combustion value gas into the combustion chamber that allows the temperature during combustion to be lowered to a value below the maximum temperature; and

a pre-mix chamber that provides for mixing of a fuel and an oxidant, wherein said fuel and oxidant are added to said pre-mix chamber separately by means of tangentially arranged supply lines.

4. (Previously Presented) Device according to Claim 3, wherein a combustion product from the combustion chamber is introduced, at least in part, via a supply line as additional gas, by means of which the temperature can be lowered during combustion.

5. (Cancelled)

6. (Currently Amended) Device according to Claim 53, wherein the pre-mix chamber includes static mixing elements and is designed in such manner that in the direction towards the combustion chamber, the flow velocity component of the mixture is greater in the pre-mix chamber than the flame velocity in the combustion chamber.

7. (Currently Amended) Device according to Claim 53, wherein the pre-mix chamber is also supplied with additional gas by means of which the combustion temperature can be lowered, so as to mix same with the fuel/oxidant mixture, preferably by mixing with fuel or oxidant before the pre-mix chamber.

8. (Currently Amended) Device according to Claim 53, wherein the size of a lateral surface of a side wall of the pre-mix chamber in proportion to the volume of the pre-mix chamber is selected in such manner that the side wall is able to accommodate free energy from detonation of gases in the pre-mix chamber.

9. (Currently Amended) Device according to Claim 53, wherein the pre-mix chamber is cooled.

10. (Previously Presented) Device according to Claim 3, wherein there is provided in the combustion chamber a porous material with inter-connected hollow spaces suitable in size for flame development.

11. (Previously Presented) Device according to Claim 10, comprising a porous material with inter-connected hollow spaces whose porosity changes over to larger pores in the direction toward the development of flame, with resulting critical Péclet number for the pore size at an inner border area, above which flame development takes place and below which flame development is suppressed.

12. (Previously Presented) Device according to Claim 11, wherein the combustion chamber has at least two zones with material of differing pore size, between which, pore size provides the critical Péclet number.

13. (Previously Presented) Device according to Claim 10, wherein the material with inter-connected hollow spaces presents, at least in part, bulk volume of bodies as they are utilized for systematic packings in thermal separation methods, such as spheres or shell bodies.

14. (Previously Presented) Device according to Claim 13 having a border area for zones of differing porosity comprised of a material of differing pore size, between which, pore size provides the critical Péclet number, wherein a grid is provided at the border area, like a grate in order to prevent discharge of the bodies from one zone into the other.

15. (Previously Presented) Device according to Claim 14, wherein the grid, in particular the grate is cooled.

16-20. (Cancelled)

21. (Currently Amended) A system for combustion of a fuel/oxidant mixture comprising:

a combustion chamber;

~~in which~~ a material, ~~is provided~~ which endures a maximum temperature lower than a combustion temperature of said fuel and said oxidation agent;

at least one supply line in communication with the combustion chamber that supplies at least one of fuel and an oxidation agent, in order to conduct these into the combustion chamber;

a low combustion value gas supply; and

an additional supply line in communication with the low combustion value gas supply and the combustion chamber for introducing a low combustion value gas into the combustion chamber to mix with the at least one of fuel and an oxidation agent to allow the temperature during combustion to be lowered below the maximum temperature, wherein said system is less than one meter in length.

~~said maximum temperature is lower than a combustion temperature of said fuel and said oxidation agent.~~

22. (Previously Presented) The system of Claim 21, wherein the low combustion value gas supply includes an outlet line in communication with an outlet of the combustion chamber.

23. (Previously Presented) The system of Claim 22, wherein the outlet line is in communication with an inlet of a heat exchanger and the outlet of the heat exchanger is in communication with the additional supply line.

24. (Previously Presented) The system of Claim 21, wherein the low combustion value gas supply comprises at least one of an inert gas source and a steam source.

25. (Currently Amended) A system for combustion of a fuel/oxidant mixture comprising:

a combustion chamber in which a material is provided which endures a maximum temperature, the combustion chamber having an inlet and an outlet;

a pre-mix chamber disposed upstream from and in communication with the inlet of the combustion chamber;

~~at least one~~ one or more separate supply lines in tangential communication with the pre-mix chamber that supply~~ies~~ at least one of fuel and an oxidation agent to conduct these into the combustion chamber;

a low combustion value gas supply; and

an additional supply line in communication with the low combustion value gas supply and the pre-mix chamber for introducing a low combustion value gas into the combustion chamber that allows the temperature during combustion to be lowered below the maximum temperature, wherein

said maximum temperature is lower than a combustion temperature of said fuel and said oxidation agent.

26. (Currently Amended) Device according to Claim 3, wherein the at least one additional supply line is in communication with the combustion chamber to deliver the low combustion value gas into the combustion chamber to mix the low combustion value gas with

the fuel and the oxidant.

27. (Previously Presented) Device according to Claim 3, further comprising a pre-mix chamber connected with the at least one supply line that allows mixing of the low combustion value gas with the fuel/oxidant mixture.

28. (Previously Presented) Device according to claim 3, wherein said device is a reactor vessel for synthesis of hydrochloric acid, said fuel includes a chlorine-containing compound and said oxidant includes hydrogen.

29. (Previously Presented) Device according to claim 21, wherein said device is a reactor vessel for synthesis of hydrochloric acid, said fuel includes a chlorine-containing compound and said oxidation agent includes hydrogen.

30. (Previously Presented) Device according to claim 25, wherein said device is a reactor vessel for synthesis of hydrochloric acid, said fuel includes a chlorine-containing compound and said oxidation agent includes hydrogen.

31. (Currently Amended) A combustion system, comprising:

a combustion chamber, for the combustion of a mixture below said mixture's combustion temperature, having an inlet, an outlet, a first chamber region, and a second chamber region intermediate said first chamber region and said inlet;

a first porous material, disposed in said first chamber region, a pore size of which first porous material permits flame formation;

a second porous material, disposed in said second chamber region, a pore size of which second porous material retards flame formation;

a mixing chamber disposed upstream from and in communication with said inlet;

a first supply line that feeds a first gas stream comprising a fuel directly into said mixing chamber;

a second supply line that feeds a second gas stream comprising an oxidation agent directly into said mixing chamber; and

a low combustion value gas supply line that supplies a low combustion value gas to said mixing chamber via said first supply line and/or said second supply line, wherein

said first, second and low combustion value gas supply lines are tangentially arranged to said mixing chamber,

said first porous material and said second porous material are chosen such that a combustion temperature of said fuel and oxidation agent exceeds the lower of a maximum temperature that said first porous material can withstand and a maximum temperature that said second porous material can withstand, and

said first porous material and said second porous material are chosen such that a combustion temperature of a resultant mixture of said fuel, said oxidation agent and said low combustion value gas in said mixing chamber is less than said maximum temperature that said first porous material can withstand and less than said maximum temperature that said second porous material can withstand.

32. (Previously Presented) The system of claim 31, wherein

said first supply line feeds said first gas stream into said mixing chamber at a first location, and

said second supply line feeds said second gas stream into said mixing chamber at a second location that is spaced from said first location.

33. (Previously Presented) The system of claim 31, wherein

said low combustion value gas is water vapor, an exhaust gas resulting from combustion of said mixture or an inert gas with respect to said combustion.

34. (Previously Presented) The system of claim 31, wherein said system is a reactor for synthesis of hydrochloric acid, said fuel includes a chlorine-containing compound and said oxidation agent includes hydrogen.

35. (Currently Amended) A combustion system, comprising:

a combustion chamber, for the combustion of a mixture below said mixture's combustion temperature, having an inlet, an outlet, a first chamber region, and a second chamber region

intermediate said first chamber region and said inlet;

a first porous material, disposed in said first chamber region, a pore size of which first porous material permits flame formation;

a second porous material, disposed in said second chamber region, a pore size of which second porous material retards flame formation;

a mixing chamber disposed upstream from and in communication with said inlet;

a first supply line that feeds a first gas stream comprising a fuel directly into said mixing chamber;

a second supply line that feeds a second gas stream comprising an oxidation agent directly into said mixing chamber;

a third supply line that feeds a third gas stream directly into said mixing chamber; and

a low combustion value gas supply line that supplies a low combustion value gas to said mixing chamber via one or more or said first supply line, said second supply line and said third supply line, wherein

said first, second, third and low combustion value gas supply lines are tangentially arranged to said mixing chamber,

said first porous material and said second porous material are chosen such that a combustion temperature of said fuel and oxidation agent exceeds the lower of a maximum temperature that said first porous material can withstand and a maximum temperature that said second porous material can withstand, and

said first porous material and said second porous material are chosen such that a combustion temperature of a resultant mixture of said fuel, said oxidation agent and said low combustion value gas in said mixing chamber is less than said maximum temperature that said first porous material can withstand and less than said maximum temperature that said second porous material can withstand.

36. (Previously Presented) The system of claim 35, wherein

said first supply line feeds said first gas stream into said mixing chamber at a first location,

said second supply line feeds said second gas stream into said mixing chamber at a second location that is spaced from said first location, and

said third supply line feeds said third gas stream into said mixing chamber at a third location that is spaced from both said first location and said second location.

37. (Previously Presented) The system of claim 35, wherein

said low combustion value gas is water vapor, an exhaust gas resulting from combustion of said mixture or an inert gas with respect to said combustion.

38. (Previously Presented) The system of claim 35, wherein said system is a reactor for synthesis of hydrochloric acid, said fuel includes a chlorine-containing compound and said oxidation agent includes hydrogen.